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A NOTE ON GARY BECKER'S "CRIME AND PUNISHMENT: AN ECONOMIC APPROACH"

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I. Introduction

The economic analysis of penal law has been the subject of several articles within the past ten years. Perhaps the most prominent contribution to this field is an article by Gary Becker in 1968, where offences are viewed as economic activities with external effects and punishment is conceived of as a form of taxation.¹ However, Becker's analysis suffers from the shortcoming that the allocational effects of theft and fraud are not completely understood. This note constitutes an attempt to describe Becker's model in such a way that this shortcoming is apparent, and an alternative explanation of the penal system is proposed.

2. Becker's Model

In Becker's analysis, criminal activities are not assumed to differ from other forms of economic activity in which negative external effects are present. The "thief" expends resources to steal and the victim who suffers theft is said to experience negative external effects. Recalling that the Pigouvian solution to negative externalities is to introduce fees or taxes on the externality generating activity, Becker postulates that prohibition rules combined with fines (or other punishment) constitute such a fee system. However, before charging a fee, the externality generating activities must first be identified. This identification is costly for society. The total costs of identification and fee charging can thus be reduced by (1) outlawing the activity, (2) increasing the fee (and renaming it "fine" or "punishment"), and (3) cutting down on resources expended in identification. In this way, a "stochastic" fee system arises in which the probability of "getting caught" times the fine for getting caught equal the Pigouvian fee.

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¹ Becker, G. "Crime and Punishment: An Economic Approach", *Journal of Political Economy*, March/April 1968.

Becker then proceeds to analyze the optimal size of the judicial system by assuming that the judicial system should minimize the total social costs of crime. These total costs are the sum of the “net damage” to individuals, the costs of maintaining the judicial system, and the suffering of criminals due to punishment.

In Becker’s analysis, the “net damage” to individuals is a function of the number of offences committed. A given number of offences, N , is assumed to generate “harm” to victims equal to $H(N)$ and, at the same time, gain to offenders equal to $G(N)$. Thus the net damage to individuals from N is $D(N) = H(N) - G(N)$.² Note that Becker’s determination of the optimal size of the judicial system is not without difficulties. For instance, there is no reason to believe that the net harm to victims will be greater than the net gain to offenders. Indeed, it could be argued that, in general, $D < 0$ since in order to be driven to theft an individual’s gain from theft must be “high”. At any rate, whenever $D \leq 0$, Becker’s reasoning leads us to the conclusion that the optimal, social-cost minimizing size of the criminal judicial system is zero.

That property offences can be regarded as a form of transfer is without question. However, Becker and other authors who have dealt with this subject seem to have missed the point in emphasizing the transfer nature of such crimes. Consider, for example, a “typical” statement from Swedish policy discussions concerning minor property offences such as shoplifting and medical insurance frauds:

“The offences in question generally concern small amounts of money which are transferred to individuals with low incomes, from the state or from enterprises which are able to distribute their incurred costs over a large number of individuals. Since such offences do not cause any obvious losses to society, why should they be punishable?”

The gist of this statement is, again, that since $D \leq 0$, there is no reason to “waste” resources on a criminal justice system. Does it not then seem paradoxical that such “waste” takes place?

3. Social Consequences of Theft

In order to explain the welfare-theoretical consequences of theft, imagine an economy in which theft is not hindered by a collective criminal justice system. Each individual runs the risk of losing a portion of his property through theft and, at the same time, each individual can steal from others. If individuals maximize utility without any consideration of other individuals’ preferences, then resources will be used not only for production and consumption but also to steal and prevent theft. Clearly, this situation is inoptimal—resources are

¹ Op. cit., pp. 172 f.

expended in theft and theft prevention and, as a result, total production and hence total consumption are lower.

To illustrate how this inoptimality might be overcome, assume for the moment that the economy possesses perfect information, that lump-sum transfers are possible, and that costless binding contracts can be negotiated which eliminate thefts. If all individuals cease their criminal behavior, a Pareto-preferred situation can be attained. Those individuals who formerly stole relatively much, however, have to be compensated by those who stole relatively little. This takes place through lump-sum transfers—the economy's total resources are sufficient to permit these transfers since total production remains undiminished. But now, resources formerly utilized in the prevention and commission of theft are freed for production of consumables, and these extra consumables can be used to increase all individuals' utilities.

In reality, however, the costliness of negotiating binding contracts motivates individuals to commit thefts and individuals are also therefore motivated to protect themselves from property offences.

4. A Graphical Representation

The possibility of theft causes resources to be utilized in the commission and prevention of crime. The loss in social welfare which is attributable to this use of resources will be called the *allocation effect* of theft. At the same time, theft will induce a change in income distribution (utility distribution)—this is theft's *distribution effect*.

We illustrate these two effects graphically (see Fig. 1).

It is assumed that the economy consists of two individuals (1 and 2). Curve EE is the "welfare frontier" given that no theft occurs. W is the social welfare function. To begin with, suppose that the social optimum at E_1 prevails. When the possibility of theft is introduced, the utility frontier shrinks to II since resources are now devoted to theft and theft prevention. The highest level of welfare attainable on II is $\bar{W}$. The magnitude of the allocation effect is thus $\bar{W} - W$.

However, there is no reason to believe that theft will lead the economy from E_1 to I_1 (where welfare is a maximum, given that theft occurs). More often than not, the result of theft will be an equilibrium on II at some other point than I_1 , for example at I_2 . The change in welfare from I_1 to I_2 , $\bar{W} - \bar{W}$, is the distribution effect of theft.

Note that the net distribution effect of theft need not be non-positive if the economy does not begin at a social optimum. For instance, in the "Robin Hood Case", the economy is initially at a Pareto-optimum with a distribution of utilities which is not welfare maximizing. This occurs at R . When Robin takes from the rich (individual 1) and gives to the poor (individual 2), resources

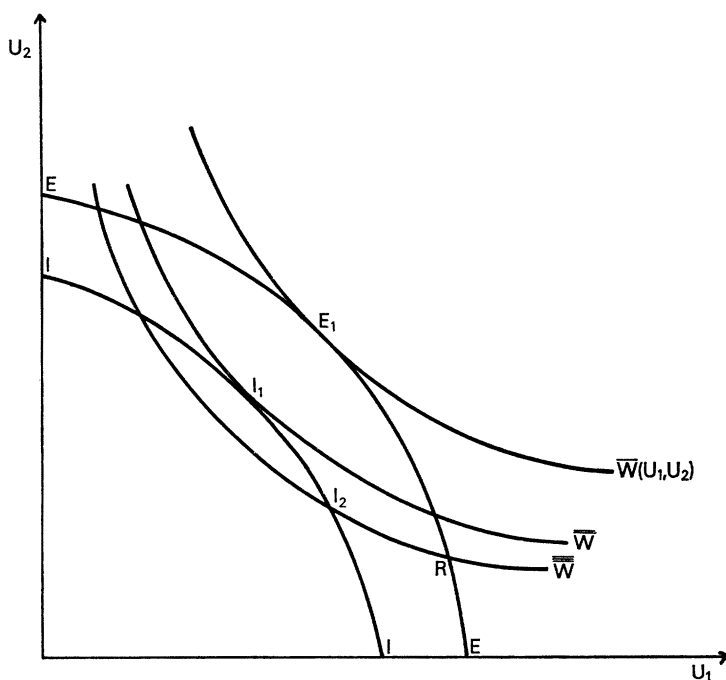


Fig. 1.

are expended both by Robin and by the rich so that the utility frontier shrinks to II. But if Robin acts according to the social welfare function and succeeds in steering the economy to I_2 , a welfare gain of $\bar{\bar{W}} - \bar{W}$ accrues to society. In this case, the allocation effect is still $\bar{W} - \bar{W}$, but the distribution effect is now $\bar{W} - \bar{\bar{W}}$.

At any rate, $\bar{\bar{W}}$ and $\bar{W}$ constitute unnecessarily low levels of welfare, compared to $\bar{W}$. Through the introduction of a collective control organ, that is, the criminal justice system, the deleterious social consequences of theft can be reduced. The judicial system fulfills its function by identifying criminal activity, by collecting fines, and by meting out and executing punishment in the manner envisioned by Becker. However, as opposed to Becker's analysis, the judicial system here is designed with explicit consideration of the preventive measures which potential victims might take. If the optimal judicial system is to minimize the *total* social costs generated by the opportunity to commit property offences, then this optimization has to take into account all components of social cost—including the costs of preventive measures taken by victims.

5. Relative Importance of the Components of the Social Costs of Theft

For practical purposes, it is useful to classify the costs of property crimes as either allocational costs or as "other" costs. Allocational costs result from the *actual* resources expended in the commission of crimes as well as from the *possibility* that one's own property might be subject to theft.¹ "Other" costs include Becker's "net damage", moral implications of crimes, etc.

A collective judicial system is a substitute for preventive measures taken by potential victims. It is therefore to be expected that changes in the character of measures taken collectively will be compensated for by potential victims. Thus, the optimal size of the judicial system is a question of whether the public sector or potential victims should bear the costs of preventing property crimes. The answer to this question depends to a large extent on the existence of returns to scale in the production of crime prevention services.

This substitutability between measures taken by the judicial system and potential victims implies that the number of offences committed need not change if the size of the judicial system is changed. Further, no unique relationship between the total allocation effect and the amount of crimes committed need exist. Different crime levels can be related to the same total allocational costs, depending on the distribution of these costs between the judicial system and private individuals. In short, there is no reason to believe that there exists a unique correspondence between the number of offences committed and the optimal size of the judicial system.

Assume, for example, that the authorities are contemplating a reduction in the resources utilized by the judicial system to combat shoplifting. If this increases the frequency of shoplifting, then profit-maximizing shopkeepers will presumably increase their own (private) preventative measures. It is possible that individual firms' increased preventative measures will exactly compensate for the decrease in preventative measures on the part of the judicial system so that the actual frequency of shoplifting remains unchanged. In this case, the deciding factor in an economic evaluation of the contemplated measure is the change in total costs of prevention as society bears less and private firms more of these costs (that is, neglecting the costs of committing crimes). If the level of crime remains relatively unaltered by changes in the size of the judicial system, then the "net harm" inflicted by these crimes will

¹ The existence of such allocational costs is relevant in connection with the general problem of negative externalities. When externalities are present, allocative effects to guard against them are usually available. Vagueness on this point is common in the literature. If, to take the classical example, a farmer's cattle trample down his neighbors' wheat, then the cattle's behavior has induced a negative external effect on the neighbor. If fences are erected in order to ameliorate this situation then the negative externalities will be eliminated. Allocation costs in the form of fences remain, however, as a consequence of the *potential* external effects. These costs are not identical with the actual externality. (Cf. Coase, R. "The Distribution between Private and Social Benefits and Costs", *The Journal of Law and Economics*, Oct. 1960.)

also remain constant and this factor is therefore irrelevant as far as the authorities are concerned. In the same way, it would be incorrect to maintain that the allocation of resources in the judicial system is “wrong” solely because large amounts of resources are expended to hinder crimes which involve small amounts of money.

In this respect it is interesting to note that ever since criminal statistics were introduced in the 19th century, attempts have been made to estimate the social consequences of crime by measuring the amount of crimes actually committed. What these statistics are concerned with is the “net damage” of crimes combined with the resources expended by criminals in committing such offences. Preventative measures taken by potential victims have, on the other hand, been neglected, despite the fact that these statistics refer mainly to property offences and to offences against person—areas where allocation effects should be of great importance.

This may be forgiven on the basis that it is impossible to measure the total amount of resources devoted to private protection against crime. Walls, locks, auditing procedures, safes, guards, department store employees, taxi rather than subway trips, etc., have many purposes, one of which is crime prevention. For practical purposes, however, it should be possible to estimate *changes* in the magnitude of preventative measures taken by potential victims.

6. A Final Appraisal of Becker's Analysis

Becker has restricted his analysis to offences actually committed. This approach creates difficulties in explaining the existence of a judicial system which deals with crimes where the harm inflicted on victims is not significantly greater than the gain to offenders.

The problem, again, is that Becker takes distributional and “other” effects (in connection with crimes actually committed) into account but neglects, for the most part, allocational effects. Indirectly, he includes in his analysis several of the costs of committing crimes (e.g. suffering and other *ex post* costs of punishment). However, the costs of planning and carrying out offences are omitted. To some extent, this omission may be motivated by the need for analytical simplifications

On the other hand, in an analysis of economic crimes, it is hardly defensible to neglect, as Becker does, the possibility that potential victims will find it advantageous to expend resources for their own protection. That Becker overlooks this alternative is strange because one section of his essay deals with a model of crime victims—a model introduced in order to demonstrate that private individuals as well as the judicial authorities face optimization problems.¹

¹ Op. cit. pp. 200 f.

However, the costs of private individuals are not included in Becker's calculation of the optimal judicial system.

These limitations reduce the generality of Becker's model. The latent assumptions of the model are satisfied only when the "net damage" of a crime is of decisive importance so that changes in the preventive measures taken by potential victims can be neglected. This will be the case, for instance, (1) when the victim is the state, so that preventive measures taken by individuals are non-existent, or (2) when private individuals are victims and when they do not modify their preventative measures as a result of changes in the collective judicial system.